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Address to:		Art Unit	17	7/
Mail Stop RCE Commissioner for Patents		Examiner Name	PRATT	CHRISTOPHO
P.O. Box 1450 Alexandria, VA 22313-14	50		,	101210146
		Attorney Docket N	umber of the above-identified app	
Request for Continued Exami	nation (RCE) practice under 3	37 CFR 1 114 does not apply	to any utility or plant application	n filed prior to June 8,
1995, or to any design applica	ation. See Instruction Sheet to	r RCEs (not to be submitted	to the USPTO) on page 2.	
j amenaments enclosed	with the RCE will be entered in	in the order in which they wei	any previously filed unentered are filed unless applicant instruc	te otherwise of
applicant does not wish amendment(s).	n to have any previously filed ι	unentered amendment(s) ent	ered, applicant must request no	on-entry of such
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considered a	as a submission even if this bo	ox is not checked.		GROU
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b. Enclosed				
I. 🔀 Amend	lment/Reply	iii. 🔲 In	formation Disclosure Statemer	nt (IDS)
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2. Miscellaneous				
Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a				
a period of months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required) b Other				
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Office on the date shown below.	missioner for Patents, P. O. Box 1	450, Alexandria, VA 22313-1450	or facsimile transmitted to the U.S.	Patent and Trademark
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Signature			Date 9/30/	

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PTO/SB/17 (08-03)
Approved for use through 07/31/2006. OMB 0651-0032
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1005 160 2005 80 Provisional filing fee		1451 1	1,510	1451	1,510	Petition to institute a public use proceeding	
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FEE TRANSMITTAL for FY 2003

Effective 01/01/2003. Patent fees are subject to annual revision.

Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT

(\$) 37 <i>5</i>

Complete if Known		
Application Number	09/532,395	
Filing Date	3/22/2000	
First Named Inventor	WARD, GREGORY	
Examiner Name	PRATT, CHRISTOPHER	
Art Unit	/77/	
Attorney Docket No.		

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SUBTOTAL (1) (\$)	1452	110	2452	55	Petition to revive - unavoidable	
2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE		,300	2453	650	Petition to revive - unintentional	
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1201 84 2201 42 Independent claims in excess of 3	1809	750	2809	375	Filing a submission after final rejection (37 CFR 1.129(a))]
1203 280 2203 140 Multiple dependent claim, if not paid	1810	750	2810	375	For each additional invention to be	
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over original patent 1205 18 2205 9 ** Reissue claims in excess of 20	1801	750	2801		Request for Continued Examination (RCE)	375
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Signature

Date 9-30-03

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FO FO)RM	First Named Inventor	LUARD, GREGORY F.	
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			PRATT, CHRISTORIA	
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Ward, Gregory F.

Serial No.

09/532,395 (Divisional of 08/613,336 Parent now Patent 6,051,177)

Filed:

03/22/2000

For:

Thermo-Mechanical Modification Of Nonwoven Webs

Art Unit:

1771

Examiner:

Pratt, Christopher C.

OCT 1 0 7003 GROUP 1700

REQUEST FOR CONTINUING EXAMINATION AND AFTER FINAL AMENDMENTS IN RESPONSE TO OFFICE ACTION DATED 8/27/2002

Commissioner for Patents P. O. Box 1450 Alexandria, VA 22313-1450

Sir:

- 1. Applicant respectfully wishes to traverse the basis for the Examiner's reasons for rejecting Applicant's prior response as not persuasive of patentability for reasons set forth below. Please also refer to the Applicant's contention at Examiner's point 8 below that the Final Rejection on the Second Office Action was premature and should be withdrawn
- 3. The applicant respectfully wishes to traverse the rejections of Claims 10 through 18 under 35 USC § 112 for indefiniteness as follows: Applicant respectfully traverses this rejection "that the applicant was not in the possession of the invention was filed". Per the MPEP 2163-II.A.(3a). An adequate written description of the invention by any description of sufficient, relevant identifying characteristics so long as a person in the art would recognize that the inventor had possession of the claimed invention. See Purdue Pharma LPV v. Faulding Inc., 56USPQ2dat 1481,1483.

Applicant asserts that the written description of the invention, which includes the drawings and data tables, adequately describes each rejected claim. This is evidenced by several adjudicated instances. For example an applicant may show possession of an invention by disclosure of drawings... that are sufficiently detailed to show that applicant was in possession of the claimed invention as a whole See Vas Cath, 19USPQ at 1118 ("drawings alone may provide a "written description of an invention as required by Sec112\". See also Autogiro Co. V United States, 384F.2d 391, 398 ("in those instances where a visual representation can flesh out words, drawings may be used in the same manner and with the same limitations as the specifications").

In addition, it is important to note that the parent application was issued as US Patent 6,051,177 indicating that the written description of the invention, which includes the drawings and data tables, adequately described each rejected claim.

- **5.** Please cancel Claims 10 through 18 and substitute Claims 19 through 27 as follows:
 - 19. A nonwoven web having elastic properties in the cross-machine direction wherein the anisotropic precursor web consists essentially of thermally bonded thermoplastic and non-thermoplastic fibers, said nonwoven web containing from 60 to 100% thermoplastic fibers and the remainder non-thermoplastic fibers, said precursor web being continuously drawn within a web heating means by a multiplicity of drawing means wherein the heated web is subjected to a variable tension means sufficient to provide a strain rate of at least 3.5 in./in./minute but equal to or less than 8 in./in./minute, said strain rate calculated based on the apparent gage length between individual elements of said tension means, whereby the resultant web is characterized by a narrowing of its lateral dimension, an increase in its length, an increase in web thickness and the development of a web elasticity of at least 85% recovery after being elongated at least 50% in the direction perpendicular to and in the same plane as the drawing forces.

- 20. The nonwoven web of Claim 19 wherein the thermoplastic fibers are selected from the group consisting of polyolefins, polyesters, polyamides, and their respective copolymers.
- 21. The nonwoven web of Claim 19 wherein said non-thermoplastic fibers are selected from the group consisting of natural cellulosics, regenerated cellulosics, natural fibers, glass, inorganic fibers and metallic fibers.
- 22. The web of claim 19 wherein said precursor web is laminated to a thermoplastic elastomeric film.
 - 23. The nonwoven web of Claim 19 wherein said precursor web is a thermally bonded laminate or composite consisting of two or more thermoplastic webs selected from the group consisting of spunbonded nonwovens, meltblown nonwovens, thermally bonded carded nonwovens, thermoplastic foams and thermoplastic films.
 - 24. A nonwoven web having elastic properties in the machine direction wherein the anisotropic precursor web consists essentially of thermally bonded thermoplastic and nonthermoplastic fibers, said nonwoven web containing from 60 to 100% thermoplastic fibers and the remainder nonthermoplastic fibers, said precursor web being continuously drawn within a web heating means by a multiplicity of drawing means wherein the heated web is subjected to a variable tension means sufficient to provide a strain rate of at least 3.5 in./in./minute but equal to or less than 8 in./in./minute, said strain rate calculated based on the apparent gage length between individual elements of said tension means, whereby the resultant web is characterized by a reduction of its length dimension, an increase in its lateral dimension, an increase in web thickness and the development of a web elasticity of at least 85% recovery after being elongated at least 50% in the direction perpendicular to and in the same plane as the drawing forces.

- 25. The nonwoven web of Claim 24 wherein said thermoplastic fibers are selected from the group consisting of polyolefins, polyesters, polyamides, and their respective copolymers.
- 26. The nonwoven web of Claim 24 where said nonthermoplastic fibers are selected from the group consisting and natural cellulosics, regenerated cellulosics, natural fibers, glass, inorganic fibers or metallic fibers.
- 27. The nonwoven web of Claim 24 where the precursor web is a thermally bonded laminate comprising two or more thermoplastic webs selected from the group including spunbonded nonwovens, meltblown nonwovens, thermally bonded carded nonwovens, thermoplastic foams and thermoplastic films.
- 7. Traverse Of The Examiner's Assertion That The Webs Produced By The Teachings Of The Instant Application Are The Same As Those Of Hassenboehler

Claims 10-18 Were Rejected As Obvious Under 35 USC 103(a). The applicant respectfully traverses the objection that the webs produced by the teachings of the instant application are the same as those of Hassenboehler. This traverse considers several factors which the Applicant asserts are strong evidence that the products claimed are substantially different from those of Hassenboehler:

1. The instant Application teaches the use of a significantly lower strain rate

Hassenboehler's '482. The reason for Applicant's claims to lower strain rate
is that low strain rates impart a high degree of elasticity as well as rapid return
to original length after being elongated. The elasticity differences as indicated
in the Critical Difference table below indicate a different web morphology than
Hassenboehler due to the low strain rates taught by the instant application.
Additional evidence that webs produced by the instant Application have a

different morphology than Hassenboehler due to the low strain rates taught by the instant application is demonstrated by comparing the high increases in the filtration efficiency of Hassenboehler Table III, Column 3, lines 36 to 46 due to reduction in the web pore size and distribution after processing between the un-drawn sample (draw ratio of 1) and the drawn webs with draw ratios ranging from 1.5 to 2.5. The product webs of the instant application have no significant reduction in the web pore size and distribution after processing as shown in Table 4 of the instant Application. This is a result of the lower strain rate of the present invention compared to the extremely high rates taught by Hassenboehler's '482 and strongly indicates that significant differences exist in the morphology of web products prepared using low strain rates taught by the instant application, and thus differentiates between Hassenboehler and the instant Application.

2. Examiner asserts that the use of low strain rates (less than 10 inches per inch per minute) of the instant application would have been obvious to a person having ordinary skill in the art. The applicant traverses this assertion on the grounds that a person, including Hassenboehler, having ordinary skill in the art did not teach, use or claim strain rates below 10 in./in./minute. The Examiner incorrectly asserts that using a reduced strain rate would have been motivated by "the desire to optimize the filtration properties of the web". In fact Hassenboehler teaches a preferred strain rate of 20 to 200 in./in./minute and a best mode strain rate of 30 to 60 in./in./minute. If Hassenboehler, having ordinary skill in the art, would have recognized the

path to the optimization was through lowering the strain rates, he would have taught and claimed those rates claimed in the instant Application but he did not. The applicant, however, is not seeking improved filtration efficiency but is seeking improved elasticity performance.

Applicant asserts that the specification of the instant application's shows that there is no significant change in pore size due to the processing. This is because the fabric is not as disrupted by the instant application's low shear rate processing compared to Hassenboehler 5,244,482. The changes in filtration efficiency are negligible as shown by Table 4 from Page 14 of the instant application.

Table 4

<u>Change in Liquid Filtration Efficiency Before And After Thermomechanical</u>

Sample	e Web Typ	oe Fiber Type	Basis	Filtration	Filtration
			Weight	Efficiency	Efficiency
				Before	After
			GM/Sq M	%	%
1	MB	100% PP	60	85	85
2	TB	70%PP/30%Rayon	30	35	36
3	SB	100% PP	30	33	33*
4	SB	100% Nylon	45	41	43
5	SB	100% PP	100	37	37
6	SB	100% PET	24	33	33
7	MB	100% PET	75	81	81
8	ТВ	65% PET/ 35% Rayon	24	35	37
9	SB	100% PP	18	18	18
10	SB/PU	100% PP/100% PU Film	32	N/A	N/A

SB = Spunbond, MB = Meltblown, TB = Carded and Thermally Bonded PU = Polyurethane film, PP = Polypropylene, PET = Polyester

Processing

^{*} Corrected data point

The Examiner's assertion that the above Table 4 shows at least one instance (example 6) of a substantial change in filtration efficiency i.e. 33 to 3. In this case the data was incorrectly stated and should have been 33 to 33. Even if the efficiency change was 33 to 3 it would have been in the wrong direction to the teachings of Hassenboehler.

Now examining Hassenboehler's 5,244,482 Table III Column 15, lines 38-47; this data shows as the draw ratio (a measure of shear rate) increases that there is a profound increase in filtration efficiency due to changes in the pore size and pore size distribution.

Applicant asserts that the specification of the instant application's shows that there is no significant change in pore size due to the processing. This is because the fabric is not as disrupted by the instant application's low shear rate processing compared to Hassenboehler 5,244,482. The changes in filtration efficiency are negligible as shown by Table 4 from Page 14 of the instant application.

The only conclusion that can be made is that the webs produced by the low shear rates taught by the instant application had little or no change in pore size and are fundamentally different structures with different morphology and therefore patently different over Hassenboehler's.

CRITICAL DIFFERENCES IN STRAIN RATES BETWEEN THE INSTANT APPLICATION AND HASSENBOEHLER'S '482 AS THEY AFFECT ELASTIC RECOVERY

Applicant submits the following Declaration under CFR 37 1.132 declaring a critical difference between the Hassenboehler strain rates of greater than about 10 inches per inch per minute and the instant application's strain rates of less than about 8 inches per inch per minute.

DECLARATION OF GREGORY F. WARD

A critical difference exists between the Hassenboehler strain rates of greater than about inches per inch per minute and the instant application's strain rates of less than about 10 inches per inch per minute. This difference is shown in the following table.

Elastic Recovery After 50% Elongation For Various Strain Rates On A 30GSM PP Spunbond

Strain Rate	Recovery	Recovery	Difference
inches/inch/min.	10 seconds	300 seconds	10-300 sec.
	(%)	(%)	seconds
3	96	97	1
4	95	96	1
5	95	96	1
6	95	96	1
7	94	95	1
8	93	95	2
9	88	94	6
10	80	90	10
11	78	89	11
12	76	88	12
13	74	87	13
14	70	85	15
15	68	84	16
16	67	83	16
17	65	82	17
18	63	81	18
25	57	75	18
30	52	71	19

The data show a sharp break in the 10 and 300 second rate of recovery in the area of strain rates of greater than about 10 inches per inch per minute which indicates the difference between the wbs produced by the instant application and those produced by Hassenboehler's '482.are morphologically significantly different.

It has also been demonstrated in Ward's US Patent 6,051,177.

The applicant understands that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001) and may jeopardize the validity of the application or any patent issuing thereon. The Applicant declares that all statements are made of the declarant's own knowledge are true and that all statements made on information and belief are believed to be true. (Per 37CFR 1.68)

Very respectfully,

~.	(Jane)
Signature:	

Print Name: Gregory F. Ward Date: 9/29/03

Commercial Success Considerations

Applicant claims commercial success as showing that product webs of the instant Application are different than Hassenboehler. Product webs of the instant Application have been produced in Taiwan and sold in Asia since 1996 and the United States since 7/2002 whereas to the best of my knowledge there have been no commercial applications of the Hassenboehler process or its web products even though Licensing of it has been aggressively marketed by the University of Tennessee Research Corporation since 1993. This fact is attested to by the following Declaration and (1) a copy of the License's first and last pages (Exhibit A, attached) and (21) a copy of a secod License's first and last pages (Exhibit B), attached under which the product is manufactured in Asia as well as a sample of product literature showing a product made using the web which is the subject of the instant application.

DECLARATION OF GREGORY F. WARD

Applicant submits the following Declaration declaring that product web has been commercially manufactured in Taiwan and sold continuously since 1996 in Taiwan, China, Korea, Japan and Vietnam as well as other East Asian Countries and the United States.

The applicant understands that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001) and may jeopardize the validity of the application or any patent issuing thereon. The Applicant declares that all statements are made of the declarant's own knowledge are true and that all statements made on information and belief are believed to be true. (Per 37 CFR 1.68)

Very respectfully,	(a)
Signature:	
Print Name: Gregory F. Ward	Date: 9/29/03

CONCLUSION

For all of the above reasons, applicant submits that the claims are now in proper form, and the claims all define patentability over the prior art and are not obvious with respect to prior art. I believe that this application is now in condition for allowance which action I respectfully solicit.

Conditional request for Constructive Assistance

If for any reason this application is not believed to be in full condition for allowance, applicants respectfully request the constructive assistance of the Examiner pursuant to M.P.E.P. § 706.03(d) and § 707.07(j) in order that the undersigned can place this application in allowable condition as soon as possible and without need for further proceedings.

Very respectfully,

Gregory F. Ward, Applicant Pro Se

11115 Rotherick Drive Alpharetta, GA 30202

Exhibit A

Applicant Ward, Gregory F.

Serial No. 09/532,395 Divisional of 08/613,336 Parent now Patent 6,051,177

Filed: 03/22/2000

For: Thermo-Mechanical Modification Of Nonwoven Webs

Art Unit: 1771

Examiner: Pratt, Christopher C.

LICENSE AGREEMENT

BETWEEN

ADVANCED TECHNOLOGY DEVELOPMENT, INC.

AND

FLEXUS SPECIALTY NONWOVENS, LTD. (PHOENIX SPECIALTY NONWOVENS, LTD.)

This LICENSE AGREEMENT effective the 26th day of March, 1996 is by and between Advanced Technology Development, Inc., hereinafter referred to as ATD, a Delaware corporation with offices at 407 Montrose Parkway, Norcross, GA, USA and Flexus Specialty Nonwovens, Ltd. (Phoenix Specialty Nonwovens, Ltd.), hereinafter referred to as FSN, a Taiwan limited liability company and subsidiary of Nan Ya Plastics Corporation, with offices at Room 601, Ming Chi Building, No. 54, Ming Sheng East Rd., Taipei, Taiwan.

WITNESSETH

WHEREAS, ATD possesses certain proprietary technology, and process and product know-how regarding the production of unique nonwoven webs exhibiting improved softness, conformability, and a high degree of commercially valuable elasticity from precursor webs containing thermoplastic fibers or blends of thermoplastic fibers and non-thermoplastic fibers, hereinafter referred to as "Licensed Web Products" resulting in a patent application entitled "Thermomechanical Modification of Nonwoven Webs" all of which is collectively referred to hereinafter as the "ATD Core Technology", and

WHEREAS, ATD has licensed FSN to manufacture, use and sell products made using the ATD Core Technology on a temporary and interim basis; and

WHEREAS, ATD is willing to grant FSN, in its new status as a Nan Ya subsidiary, a permanent, worldwide, exclusive, non-transferable license subject to the provisions of this agreement, with the right to sublicense under its technical information and patent rights relating to the said ATD Core Technology; and

ag/mt/licagre/n.1

- 8.2 FSN shall, at its own expense, be responsible for applying and obtaining any approvals, authorizations, or validations required by under the laws of the United States of America, Taiwan or any other foreign country that may be necessary for the manufacture use and sale of Licensed products or relative to the performance of any obligation under this Agreement.
- 8.3 The terms and conditions herein constitute the entire agreement between the parties and shall supersede all previous agreements, either oral or written, between the parties hereto with respect to the subject mater hereof. No agreement on understanding bearing on this License Agreement shall be binding on the other party hereto unless it shall be in writing and signed by a duly authorized officer of each of the parties and shall expressly refer to this License Agreement.

Executed as of the date first above written.

BY ATD	BY FSN
Name: (Signature)	Name: Signature)
Name: Caseany F. WARD (Printed)	Name: DE-SHENG TSAT
Title: / RE, DONT	Title: PRESIDENT

agrmt/licagre/n.6

Exhibit B

Applicant Ward, Gregory F.

Serial No. 09/532,395 Divisional of 08/613,336 Parent now Patent 6,051,177

Filed: 03/22/2000

For: Thermo-Mechanical Modification Of Nonwoven Webs

Art Unit: 1771

Examiner: Pratt, Christopher C.

LICENSE AGREEMENT BETWEEN PHOENIX GROUP USA, INC. AND

GOLDEN PHOENIX FIBERWEBS, INC.

WITNESSTH

WHEREAS, GPF wishes to obtain and PGUSA agrees to grant GPF a non-transferable, exclusive and irrevocable right and license to utilize the PGUSA Core Technologies to manufacture, supply, distribute and sell the Licensed Web Products in the territories as set forth in Section 2 below.

NOW, THEREFORE, and in consideration of the premises, the parties hereby agree to the following terms and conditions:

1. **DEFINITIONS**

- 1.1 PGUSA shall mean the owner of the titles and rights of the PGUSA Core Technologies. Gregory F. Ward, the inventor and sole owner of the PGUSA Core Technologies, formed Phoenix Group USA, Inc. in 1992. Gregory F. Ward is the sole owner of Advanced Technology Development Inc (ATD). Gregory F. Ward has granted the full licensing right of the issued patents and future patents to PGUSA.
- 1.2 **PGUSA Core Technologies** shall mean the proprietary technology, and process and product know-how including patents entitled "Thermo-mechanical Modification of Nonwoven Webs" under US patent No. 6,051,177, was granted to Gregory F. Ward; the pending patent under US application 9/532,395, pending for Gregory F. Ward; any patent or pending patent owned by Mr. Gregory F. Ward related to above said patents or technologies relating to the production of unique nonwoven webs exhibiting improved softness, conformability, and a high degree

Executed as of the date first above written.

PHOENIX GROUP USA,	and I do
Ву:	KYLE PRATT Notary Public, Fulton County, Georgia My Commission Expires Oct. 3, 2006
Name: Gregory F. Ward	_
(Printed)	
Title: Chairman and CEO	
(Printed) Date: 7/30/03	
GOLDEN PHOENIX FIBERWEBS,	INC.
By: Kenneth Jong	
	(CHENG, YUAN-LONG)
Title: Charrman	
(Printed) Date: July 21. 2003	
In Witnesses:	^
By DOH. NO	By: Ohnley Fair
Name David Gilstrap (Printed)	Name: SHIRLEY LOUIE (Printed)
Date: 7-21-03	Date: $7 - 21 - 03$

策號 : 114033 日期JUL 21 2003 Case No. Date 文符全程與其(股) 行 之簽名或蓋章,於台灣台北地方法院 所屬民間公證人陳幼麟事務所認證。 公證人 陳 幼 麟 Attested at the Chen, Yu-Lin Notary Public Office of Taiwan Taipei District Court, R.O.C., that the signature(s)/seal(s) of GOLOEN PHOENIX FIBERWEBS, INC. in this document is/are authentic. Notary Public Chen, Yu-Lin